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October 30, 2009

Ex Parte

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

*Re: Comments Sought on the Implementation of Smart Grid Technology, GN Docket
Nos. 09-47, 09-51, 09-137*

Dear Ms. Dortch:

On October 29, 2009, Christopher Hill, Jeffrey Dygert, Robert Vitanza and I, on behalf of AT&T Services, Inc., met with Nick Sinai and Charles Worthington, of the Office of Strategic Planning regarding the above referenced proceeding. During the meeting, AT&T discussed the requirements for deploying Smart Grid Technology on a wireless service provider network, the impediments to deployment, and opportunities for the FCC to help overcome these obstacles. Attached to this letter are the slides that were used to aid the discussion.

Pursuant to the Commission's rules, a copy of this notice is being filed electronically in the above-referenced docket. If you require any additional information, please feel free to contact me.

Sincerely,

/s/ Joseph P. Marx
Assistant Vice President, AT&T Services Inc.

cc: meeting participants

Smart Meters Communication Options

AT&T's Role in the Smart Grid



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Agenda

- Smart Metering - Foundation of Smart Grid
- Communication Options
- AT&T Leadership Role in Smart Grid
- North American Electric Reliability Council (NERC) Critical Infrastructure Protection (CIP) Requirements
- Enterprise on Demand (EOD)
- Service Level Agreements (SLAs)

Private and Public Wireless Networks

Historical Perspective

- Historically, utilities tended to built private wireless networks because of security and lack of coverage
 - Today wireless carriers cover the vast majority of the U.S.
 - Robust wireless data security options are available
- Utilities now realizing the costs of maintaining and upgrading private networks, and turning to wireless carriers for certain applications, including
 - Field service automation
 - Supervisory Control and Data Acquisition (SCADA)
 - Substation communications

Smart Grid Starts with Smart Meters

With an IP-based Communication Network

"Advanced Metering Infrastructure or AMI is poised to play an integral role in the future as utilities work on deploying the Smart Grid concept."

Advanced Metering Infrastructure to Form Backbone of Smart Grid

UTC press release – 12/21/07

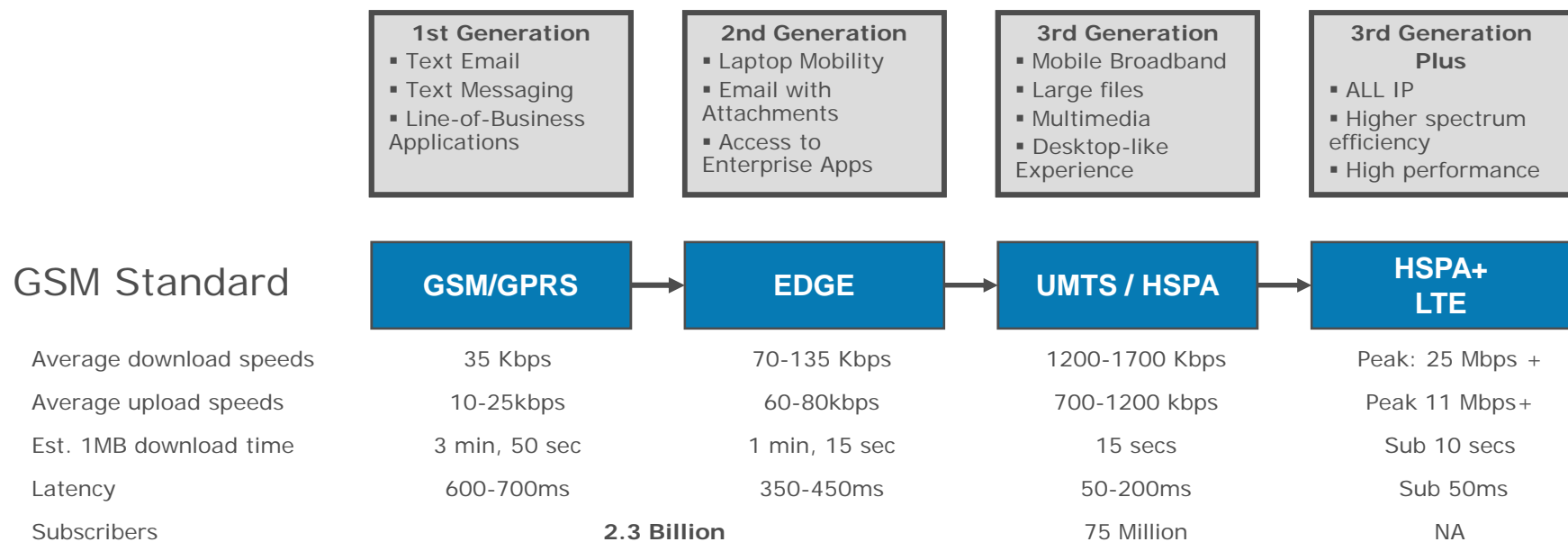
"Just as the Internet served as the foundation upon which applications such as Web browsers and e-mail were built, a broad smart grid based on intelligent meters would provide the foundation for the innovation of new applications that could fuel electric vehicles, manage distributed generation and use demand response to broadly reduce energy use and the production of climate change gasses."

Smart Grid, Stupid Policy? – Forbes 1/29/09

"Utilities are starting to install gear that relies on common standards, such as those used on the Internet, instead of proprietary technology. That's opening the market to more suppliers, says Adam Grosser of Foundation Capital, a smart-grid investor. Start-ups such as GridPoint and SmartSynch are developing software and sensors to run the grids."

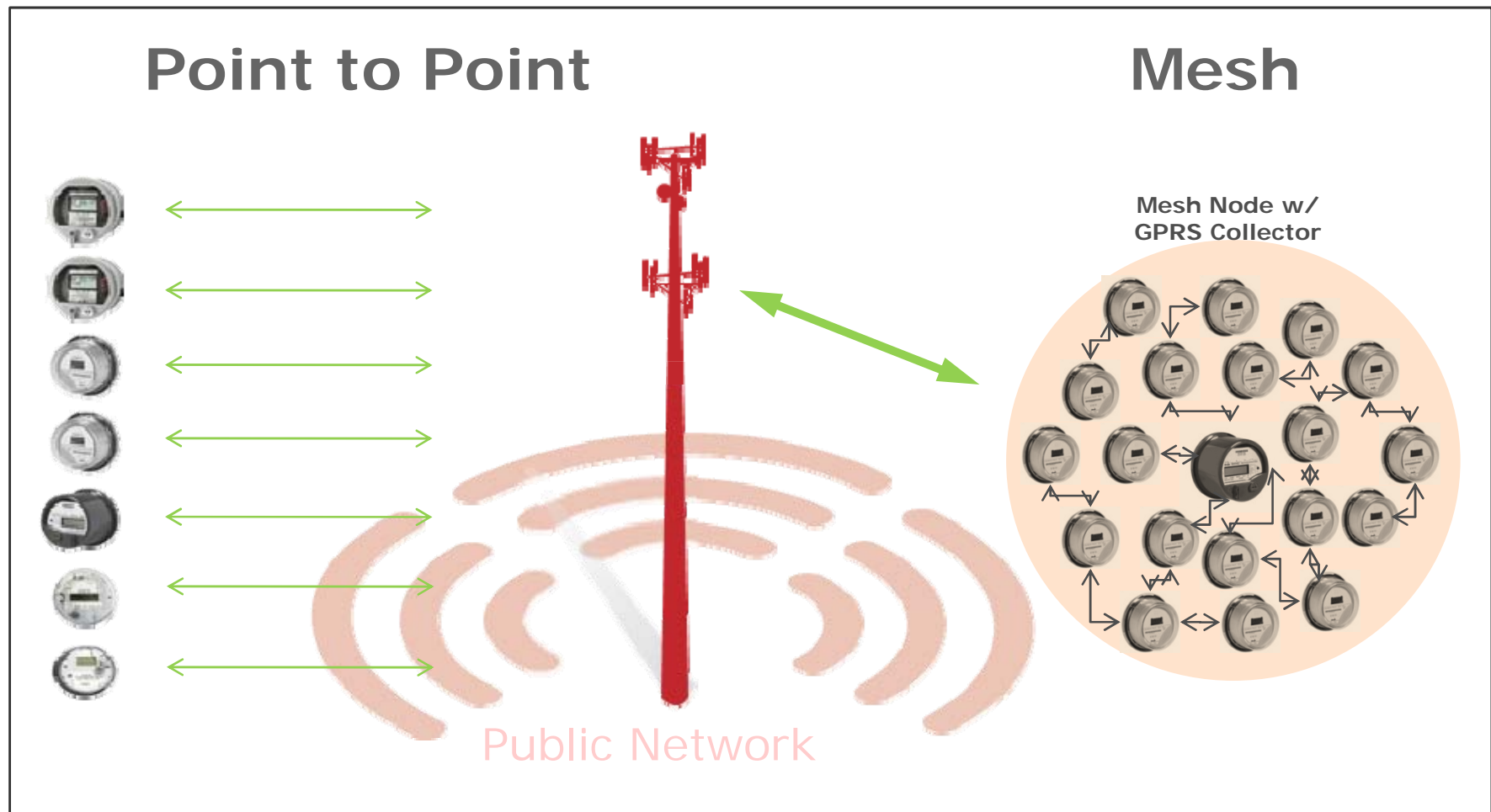
Buzz grows for modernizing energy grid – USA Today 1/30/09

Most AMI devices today are 2.5G/EDGE



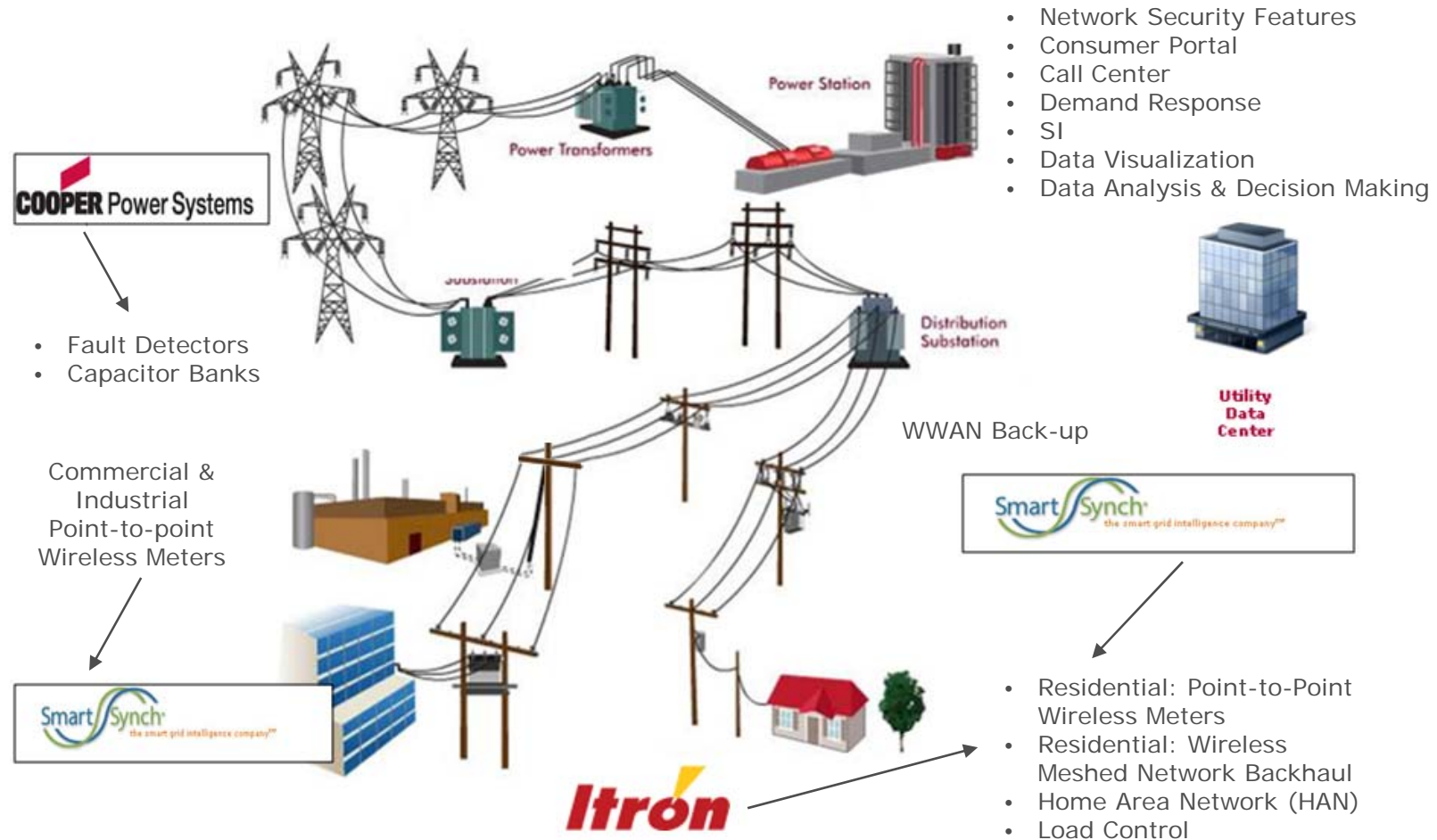
With 2.3 billion devices on the 2.5G/Edge network today and devices still being deployed, it is going to be running for a very long time.

AMI Architectures



Smart Grid Components

How AT&T Currently Overlays



Meshed Network

Advantages/Disadvantages

Advantages

- Initial cost effectiveness
- Utilities “own” and have total control of the private network

Disadvantages

- Cost of operating private network
- Two networks for transport
- Unlicensed spectrum prone to interference from other wireless devices
- Unproven technology – few large deployments and none on grand scale

Point to Point Network

Advantages/Disadvantages

Advantages

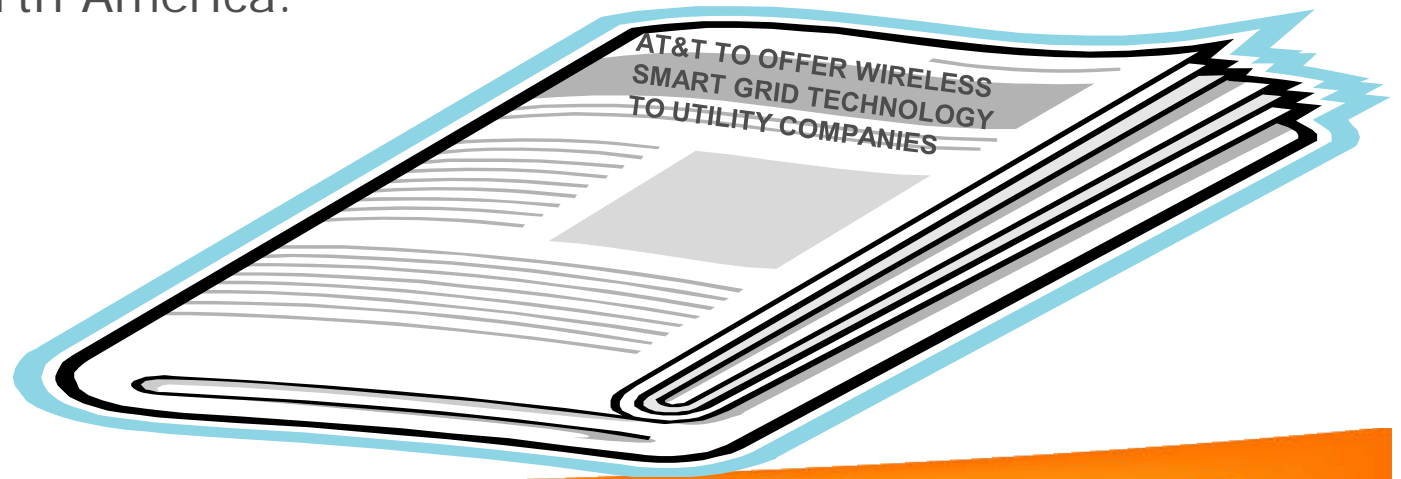
- Easy and quick to deploy
- Direct connectivity to the meter without proprietary 3rd party network
- Reduced latency and less chance for a bottleneck at the meter gateway
- Reduce need for utility capital to build private network
- Common communications network for residential and C&I, Smart Grid and AMI.

Disadvantages

- Initial cost
- Lack of control over network outages
- Concerns about network longevity

AT&T Takes Leadership Role in Smart Grid

- New alternative for electric utility companies looking to provide the benefits of smart grid technology to the residential sector.
- Partnering with SmartSynch, AT&T is providing utilities with more options to modernize the nation's electric grid via IP-based, point to point, smart metering technology.
- Combining a new suite of service plans designed specifically for machine to machine (M2M) communications with SmartSynch's smart grid solutions already deployed at more than 100 utilities throughout North America.



AMI Point to Point Offer Summary

Benefits: Lower total cost of ownership, faster deployment, buy don't build.

Value: Let communications experts provide and manage your AMI and Smart Grid communication network, and redeploy that capital and assets to your core business of energy production, transmission and distribution.

New rate plans: specifically designed for the AMI market.

AMI partner – SmartSynch - >28,000 Commercial & Industrial meters at over 100 utilities running on AT&T network and will now offer a point to point solution to utilities for residential customers.



AT&T and Cooper Power Systems

Moving 'Up the Grid'

We are jointly marketing and selling to utility companies smart grid sensor devices that are certified on AT&T's wireless data network. Utilities can receive real-time system performance data to:

- efficiently operate their electric grids
- reduce the need for on-site inspections
- identify and solve problems that could cause outages or increase system energy losses

This is the latest expansion of our efforts with smart grid technology and new AMI rate plans in the M2M space, using wireless technology to streamline business processes and provide real-time monitoring of energy assets

AT&T will co-sell two products with Cooper Power Systems:

- OutageAdvisor™
- VARAdvisor™

OutageAdvisor



- Significant advancement in fault detection and location sensor technology
- Incorporates AT&T wireless communication technology with traditional fault circuit indicators to integrate data into operation systems
- Provides electric utilities with the ability to achieve greater reliability and reduce expenses
- Designed to quickly and accurately indicate both permanent and momentary faults, find their location, shortening response time, and improving reliability indices
- Uses AT&T's wireless network to minimize investment and augments existing infrastructure
- Utility may currently be using electromechanical device that requires driving around in truck to find fault detector that has been tripped—inefficient and unreliable.

**Eliminates need for visually locating distribution line faults.
Quickly locates outages, shortens response time,
and improves electricity reliability**



- Sensor package that measures and reports the current flow through the capacitor banks to indicate fuse failures
- Helps ensure all capacitor banks are in service and that the grid continues to operate efficiently
- Reports hourly neutral current readings every 14 days
- Can be applied to switched or un-switched grounded neutral capacitor banks, without any additional cable preparation
- Increases efficiency as today, many utilities are doing visual inspections on a regular basis, necessitating a truck dispatch

Eliminates need for site inspections of capacitor banks. Sensor identifies unexpected current levels and issues alerts over AT&T's wireless network to operations personnel

Beyond Smart Meters

Wireless Technology Applications

Distribution Automation

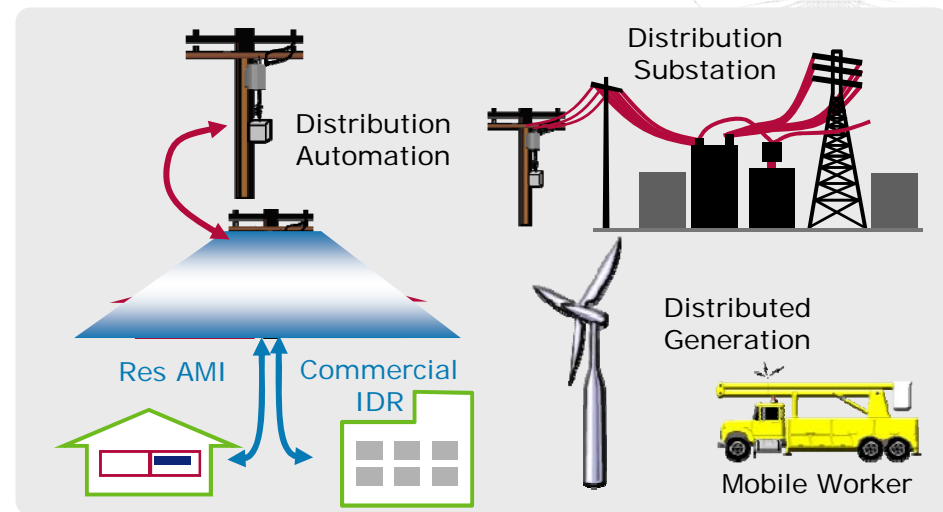
- Reclosers
- Capacitor banks
- SCADA
- Outage management

Advanced Metering

- Residential
- Commercial
- Feeder
- Outage management

Demand Side Management

- End-user devices
- Res
- Commercial
- Grid devices



Distributed Generation

- Residential
- Commercial

Mobile Workforce Mgmt

- Work order
- Voice/Data
- Location

North American Reliability Council (NERC)

Critical Infrastructure Protection (CIP) Recommendations

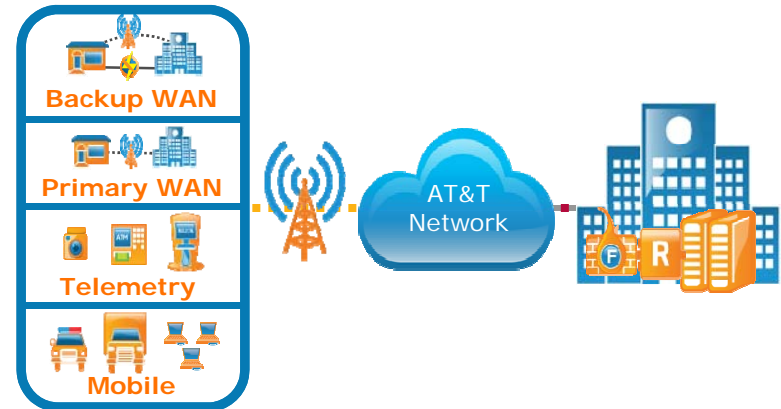
- Federal Energy Regulatory Commission (FERC) phasing in CIP requirements based on NERC recommendations, establishing legally enforceable network security standards
- AT&T's wireless and wire line data networks meet a host of international security standards
- Security best practices
 - Air Link Data Security – GPRS/EDGE Encryption
 - 3G Air Link and Core Network Data Security
- Additionally, many security rich network products
 - Commercial Connectivity Services (CCS) custom APN
 - ANIRA for remote MPLS access
- Future discussion with AT&T security experts

Core Network Security & Backend Connectivity

Commercial Connectivity Service

Challenge:

- Reliably and securely extend the reach of corporate network resources to remote locations and mobile workers



Commercial Connectivity Service provides:

- Network extension with the ability to leverage existing WAN infrastructure
- Variety of network connectivity options (AT&T MPLS (AVPN, IPeFR), Internet, IPSec VPN, Frame Relay)
- Flexible IP addressing options (public, private, dynamic, static, customer or AT&T provided)
- Customizable standards-based security enhancements (private IP, firewall, access control)
- Diversity options for enterprise connections & redundancy in AT&T Mobility radio and core network elements

Commercial Connectivity Service

Security and Business Continuity Options

Security Options

- IPSec for Internet VPN back-end connections
- Layer 2 security for Frame Relay back-end connections
- Private ePVCs for MPLS connections (AVPN, IPeFR)
- Data isolation via private APNs
- Custom Firewall Options:
 - White/black list Protocols, e.g., FTP, HTTP, Email
 - White/black list IP Addresses, e.g., IP Address ranges
 - Control Access, e.g., enable/disable mobile terminate, mobile-to-mobile capabilities

Business Continuity

- Data Center
 - Redundant devices and connection paths
 - Backup power, control and switching fabric
 - DNS servers, RADIUS servers and CCS gateway routers configured as redundant pairs
- Geo-Redundancy
 - Standard design includes link redundancy to two Data Centers
 - Automatic failover in the event of an outage
- Technology
 - Frame Relay, Network VPN, and MPLS options available at our Data Centers

Enterprise On-Demand

Activation, deployment and service management at your fingertips

Enterprise On-Demand (EOD) Service is a SIM and device ordering, activation and management platform that gives high-volume customers the ability to self-manage large numbers of devices more cost effectively.

Benefits:

- **Control** – Rapidly execute on very large data deployments with all tools within your direct control
- **Flexibility** – Respond to changes in workforce needs without incurring monthly service charges when devices are not being used
- **Immediacy** – Maximize ability to respond to your own business needs by having deployment-ready devices on hand for the exact moment they are needed

AT&T Current Resources

- Gridwise Alliance Member
- AT&T Utilities (Field Service) Executive Advisory Board
- AT&T Labs
- Worldwide Synaptic Hosting
- Extensive External Affairs Teams at the State and Federal Level



Dedicated Utilities Solution Practice

- Industry Solutions Practice Managers
- Industry LOB Marketing Manager Team
- White Papers on NERC-CIP

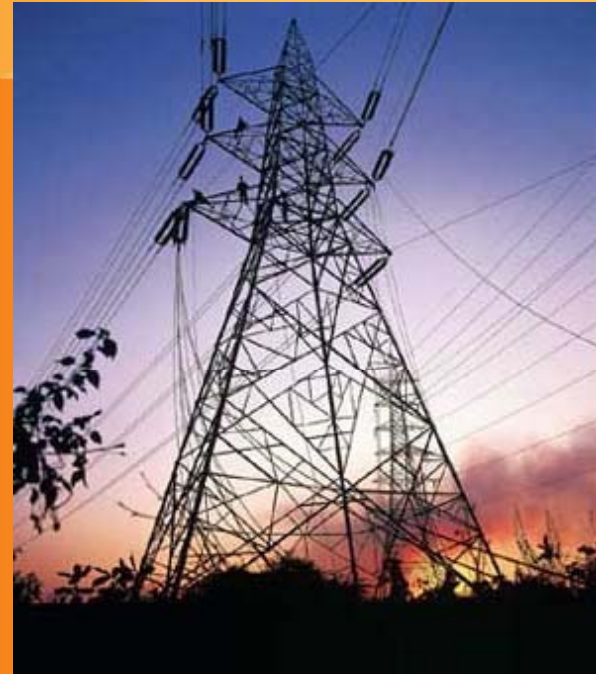




at&t

Thank You!

AT&T and Smart Grid



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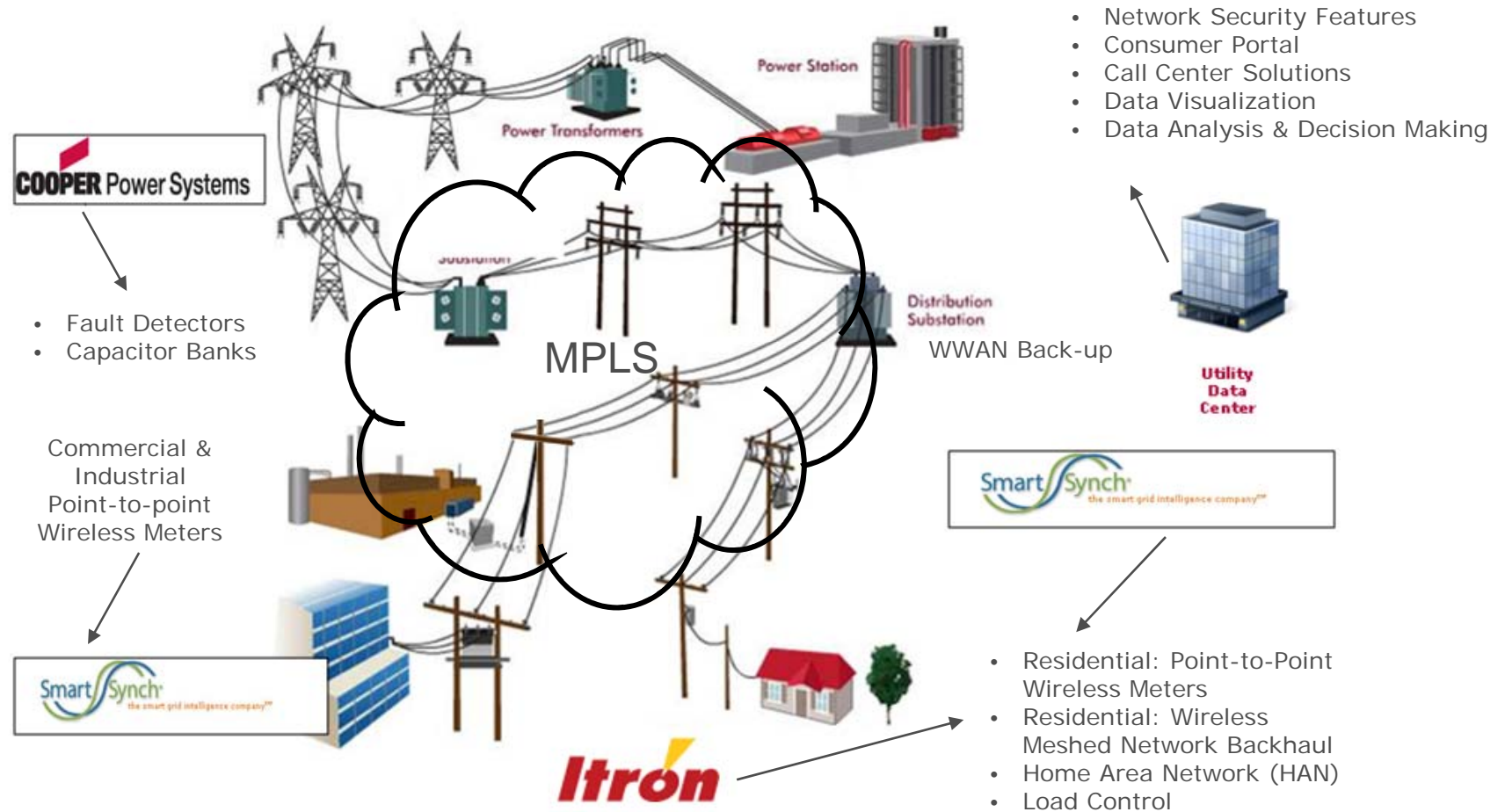
FCC, October 29, 2009

Smart Grid Technology Still Evolving

- Communications technologies for Smart Grid must be adaptable, scalable, flexible and backwards compatible.
- Commercial network will minimize risk of technical obsolescence and stranded investment as Smart Grid technology evolves.
- Many new technologies and devices coming into network:
 - Renewable energy inputs
 - Demand response for small and large users
 - Plug-in vehicles as energy resource and user

Smart Grid Components

How AT&T Currently Overlays



Commercial Providers Fully Meet Network Requirements for Smart Grid

- **Scalable and Broad Coverage** – Improves business case for deployment of broadband to unserved areas.
 - Providers continually building out and scaling network over time.
 - Business case for deployment of broadband to unserved areas.
 - Already cover more than 95% of population.
 - Fill remaining holes faster than can a new network.
 - Satellite service available to fill in holes.
 - Data management, storage, computing & analytics.
 - Migration path from HSPA 7.2 to LTE, now to 2011

Commercial Providers Fully Meet Network Requirements for Smart Grid

- **Interoperable** - Must support various devices attached by utilities and energy consumers.
 - Commercial networks support almost endless variety of devices and applications.
 - Facilitate communication across various platforms.
- **Secure and Reliable** – Paramount concern for interconnected networks
 - State-of-the-art security operation; daily support for 17 Petabytes of IP data traffic.
 - Experience and expertise; see security threats emerging, before they cause harm.
 - Emergency Priority Service.
 - Extensive disaster recovery assets already in place.

How Government Can Help

- **Findings in National Broadband Plan**
 - Smart Grid will help to support broadband infrastructure deployment.
 - Suitability of commercial network to support Smart Grid technologies.
- **Lead by example**
 - Deployment of Smart Grid technology to government facilities.
 - Support Smart Grid deployment through Stimulus and other Federal programs.
- **Encourage Deployment** – Promote adoption by consumers, enterprise customers and state/local governments.
 - Grants, Tax Incentives
 - Utilities should have incentive to adopt the most efficient communications solution for Smart Grid.
 - Avoid rate-making incentives to prefer capital expenses.

How Government Can Help

- **Preserve Flexibility for Commercial Providers to Manage and Secure Network**
 - Secure, reliable services.
 - Emergency priority services.
- **Coordinate efforts among federal agencies**
 - Various agencies are addressing questions that affect Smart Grid and the nation's unified telecommunications network.
 - Consistency in regulation and standards.
- **Support IP Standard for Smart Grid technologies:**
 - Flexible communication across various facilities.
 - Rapid and efficient deployment of different types of technologies and systems.